

Computers and Pattern Recognition



from the U.S.S.R. —
current work on
pattern recognition
and its relation to
relevant research
in the West...

by A. G. Arkadev and
E. M. Braverman
(Translated from the Russian
by J. D. Cowan and W. Turski)

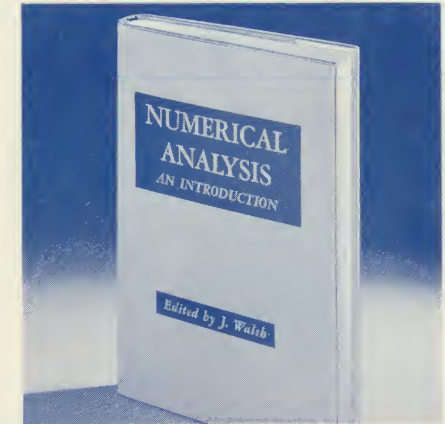
This book fills an important need for up-to-date information about Soviet developments in a rapidly-growing field. The underlying assumption throughout is that images form "compact" sets in a suitable representative "space" whose "coordinates" are the distinct "features" of the patterns presented to the machine. The image-compactness hypothesis is used as a point of reference for the analysis of different designs for the construction of pattern-recognizing machines. The algorithms underlying two well-known Western machines, the PERCEPTRON and the PAPA are also discussed in terms of this hypothesis. **Contents include: Dissecting Planes Algorithm; Algorithms Based on Potentials Method; Possible Ways of Further Improvement of Cognitive Machines.**

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Edited by J. Walsh, Dept. of Mathematics,
the University, Manchester, England
(Based on a Symposium organized by the
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held in Birmingham, England)

Individual chapters in this book are largely self-contained. The account of theory and methods is sufficiently detailed for readers who want to go further to study the more advanced works listed in the references. Subjects covered include linear algebra and the eigenvalue problem, ordinary and partial differential equations, methods of approximation and function minimization, and some applications of modern techniques to industrial problems. A concluding chapter considers the effect of the growth of numerical work on teaching. **Contents include: Applications of Computers to Pure Mathematics; Techniques of Operational Research; Computation in School and University Teaching.** There are two complete indexes, one classified by subject, the other by author.

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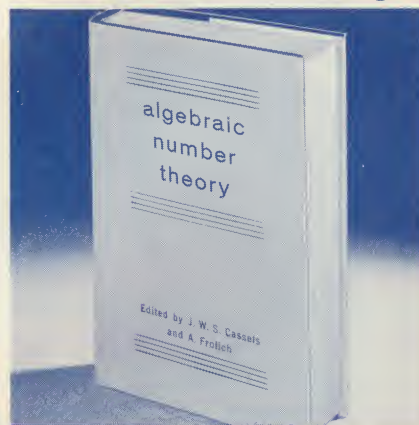
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a NATO Advanced Study Institute — with the
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The opening chapters in this work give a broad introduction to algebraic number theory; followed by the elementary and utilitarian tools needed for class field theory. The section on class field theory should dispel forever the aura of mystery which has previously surrounded the subject. The emphasis throughout is on intelligibility; the reader who has mastered what is done here can approach the rest of the literature with confidence. The concluding chapter is Tate's thesis (Princeton, 1950), which has been seminal for later developments but was never published. **Contents include:** Cohomology of Groups; Zeta-functions and L-functions; Semi-simple Algebraic Groups; Applications of Computers to Class Field Theory; Fourier Analysis in Number Fields.

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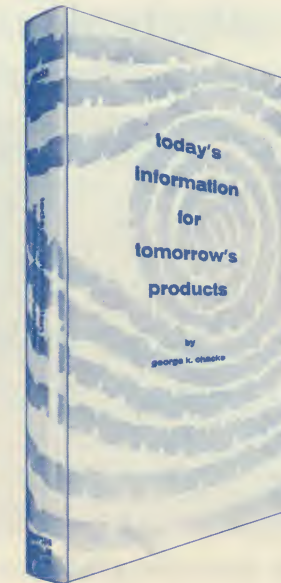
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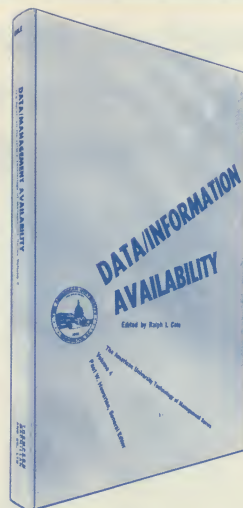
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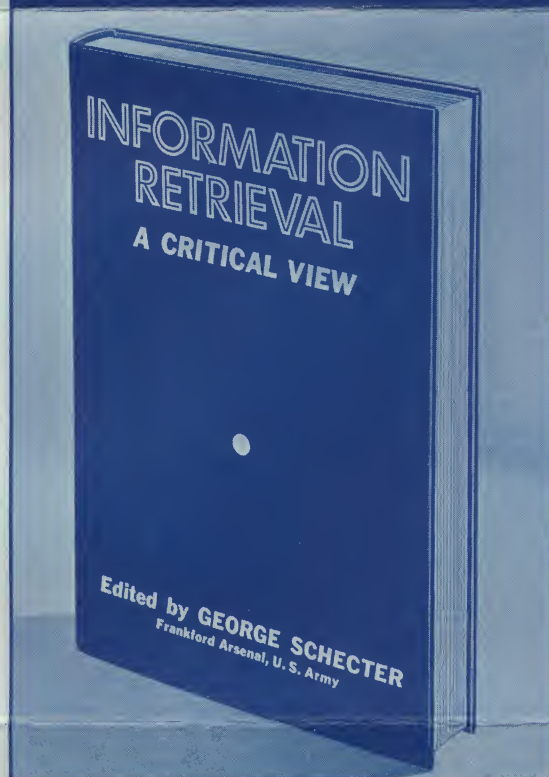
Edited by George Schechter
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The contents represent a broad yet detailed survey of recent advances in many phases of this ever-increasingly important subject. The symposium, co-sponsored by the Special Interest Group on Information Retrieval (Association for Computing Machinery), as well as groups representing Institute of Electrical and Electronics Engineers, American Documentation Institute, the Moore School of Electrical Engineering of the University of Pennsylvania and the U. S. Army indicates the scope of this symposium. The work represents "must" reading for all concerned with any ramification of information retrieval. A study of the Table of Contents will bear this out.

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Edited by Harold Pfeffer
U.S. Patent Office

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It examines the changes that the patent systems of the world today face in order to keep pace with modern technology — from the viewpoint that the patent system is a combination of the law, on one hand, and science and technology on the other. By means of progress reports, the activities of the past year by eight Patent Offices in different countries are evaluated. Systems that were tested and either accepted or rejected are presented for the benefit of all.

The discussions that follow the reports open new doors to greater mutual understanding and closer international cooperation between Patent Offices in the fields of classification and information retrieval. Seven technical sessions relate pertinent information in areas ranging from the early developmental stages of a mechanical retrieval system to more sophisticated study relating to patent office operations.

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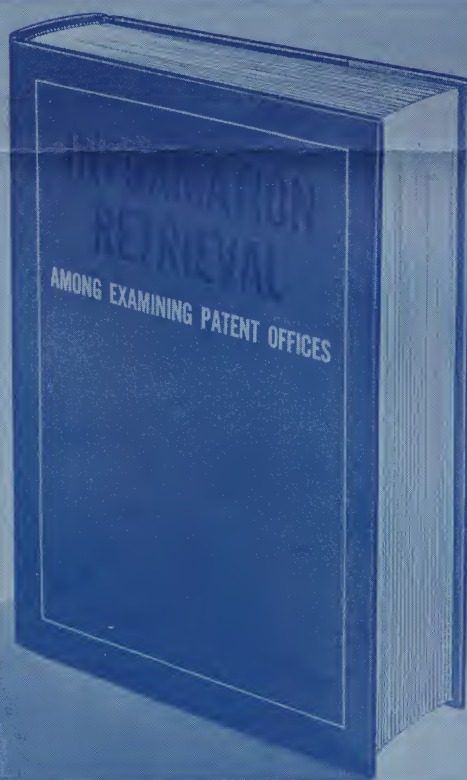
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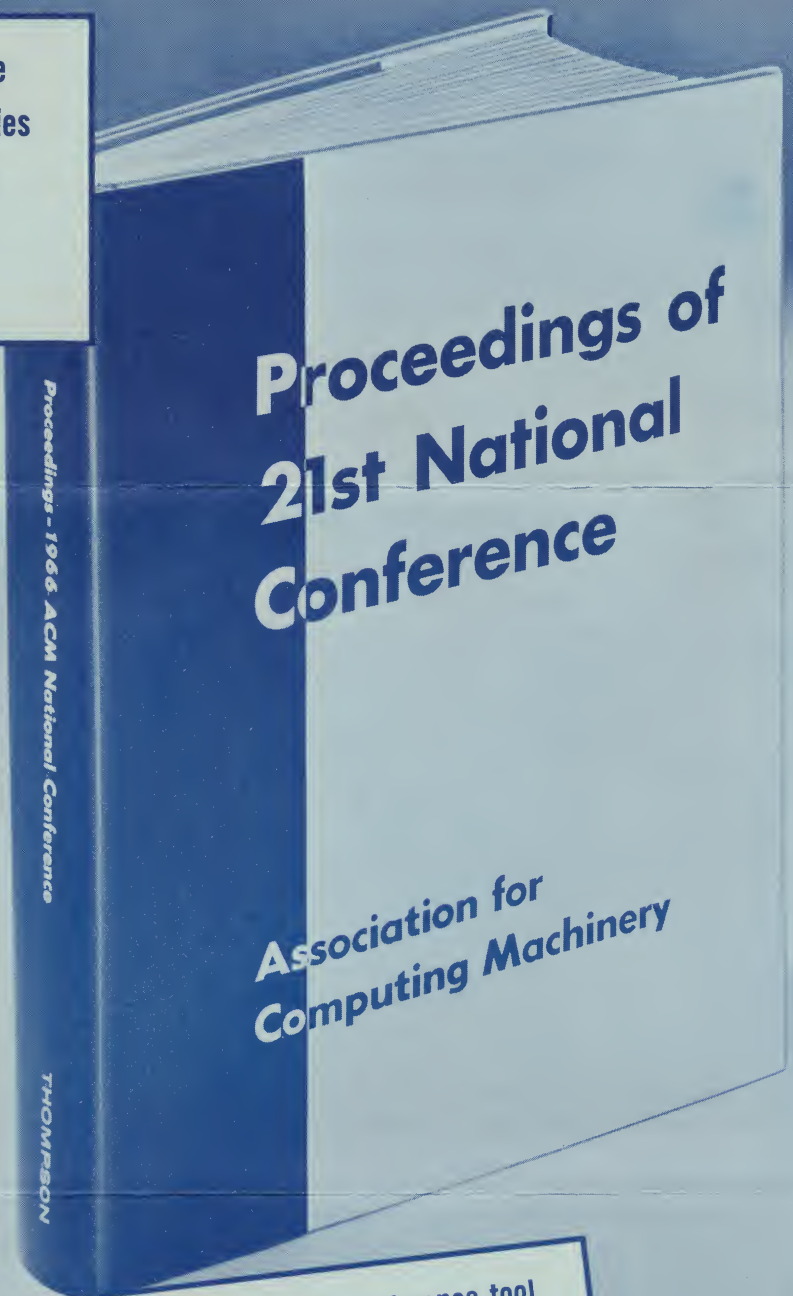
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